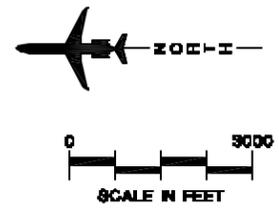


LEGEND

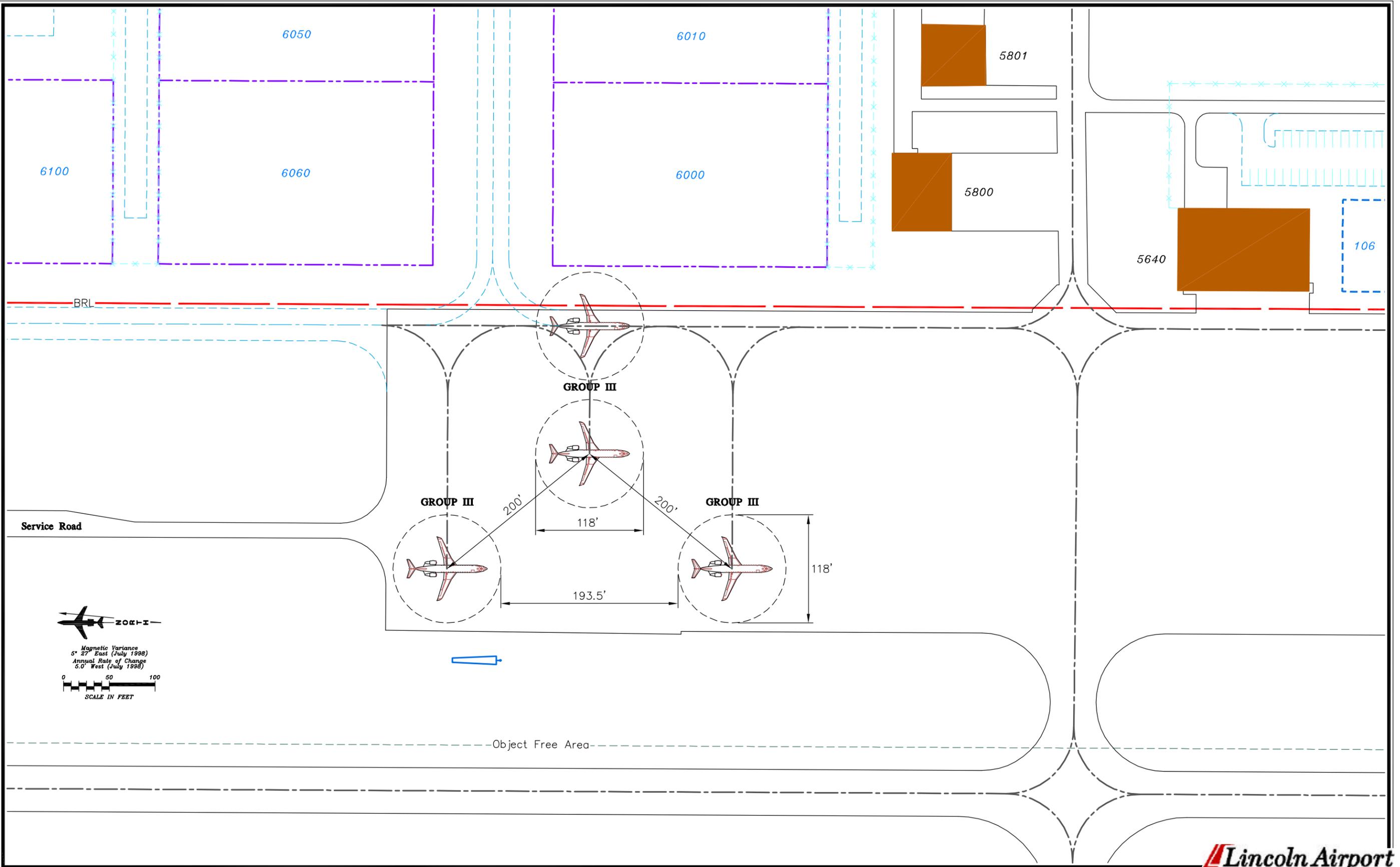
- | | |
|---|--|
| ——— Airport Property | ■ High Density Residential (10.1+ du/ao) |
| Municipal Boundaries | ▨ Floodplains |
| ----- Extra-territorial Jurisdiction | ■ Noise Sensitive |
| +++++ Railroad Tracks | ■ School |
| Study Area | ■ Library |
| ■ 65 Lmax Run-up Contour | ▲ Historic Structures |
| ■ 80 Lmax Run-up Contour | ■ Places of Worship |
| ■ Low Density Residential (0-3 du/ao) | ■ Potential Growth Risk |
| ■ Medium Density Residential (3.1-10 du/ao) | |

Source: Base Information and Map:
City of Lincoln Geographic
Information System, May 2002.
Goffman Associates Analysis.



Lincoln Airport

01SP21-4H-01/26/03



combination of using the existing run-up site on the west side of the airport from 7:00 p.m. to 7:00 a.m., and Site A from 7:00 a.m. to 7:00 p.m., has been an effective alternative for dealing with the impacts generated by the current run-up activity since March 2002. This option provides a balance between the goal of reducing potential runway incursions and eliminating run-up impacts without constructing new facilities.

Consideration should be given to putting signage adjacent to the ramp indicating the time that aircraft are allowed to run-up at the east side location. Posting the ramp weight bearing capacity should also be considered to prevent damage to the ramp.

It would also be helpful if the maintenance operators would continue to keep detailed logs recording important facts about their run-up procedures. This would help in investigating complaints about engine maintenance run-ups as well as the success for the current run-up policy. The following data should be recorded: type of aircraft, time of run-up, duration of run-up, location, aircraft orientation, number of engines used, and percentage of power used. A standardized form could be developed and supplied to the maintenance operators.

ALTERNATIVE 3 - ENGINE RUN-UP ENCLOSURE

Run-Up Enclosures

The desire to reduce potential runway incursions is a safety goal for Lincoln Airport. One way to reduce potential

runway incursions is to provide a run-up facility on the east side of the airport that can be utilized 24 hours a day for all aircraft sizes. While the current run-up policy eliminates the need for a run-up enclosure at Lincoln Airport, it is prudent to study potential locations on the east side of the airport where a 24-hour run-up facility could be developed if needed in the future.

Only one site appears to be a viable option for a run-up pen, Site C (depicted on **Exhibit 4G**). As previously discussed, Site A is within the building restriction line, Site B is within a future hangar development area, and Site D is within the RVZ.

There are various designs for run-up enclosures. Fully enclosed buildings are known as “hush-houses.” They are most commonly found on airbases and are typically designed for use by fighter aircraft. Run-up enclosures without roofs are often referred to as “run-up pens.”

Exhibit 4J shows an example of a run-up pen. This enclosure consists of a three-sided structure which can reduce noise by up to 15 decibels. The enclosure would be designed to handle the various types of aircraft operating at Lincoln Airport, with special design considerations given to the special aerodynamic issues related to turbojet-driven aircraft.

Noise Effects

The typical run-up pen attenuates run-up noise 15 dBA and, given exterior-to-interior sound attenuation of 20 to 25 dBA for typical homes with windows closed, 80 dBA translates into interior

levels of about 40 to 45 dBA. As previously discussed, these levels generally represent the lower end of the sleep disturbance spectrum. (See the sleep disturbance section in the TIP, “Effects of Noise Exposure”.) **Exhibit 4G** depicts the 80 dBA L_{max} at Site C. There are no residential units within the 80 dBA L_{max} run-up contour generated from Site C. Therefore, a run-up pen facility available 24 hours a day could be located at Site C that would not impact noise-sensitive uses.

Operational Issues

Aircraft from the east general aviation ramp would have to cross Runway 17L-35R to gain access to Site C.

Air Service Factors

There are no air service factors associated with this alternative run-up site.

Costs

The cost of constructing the ramp, associated taxiway, constructing the run-up pen, and rebuilding Taxiway E

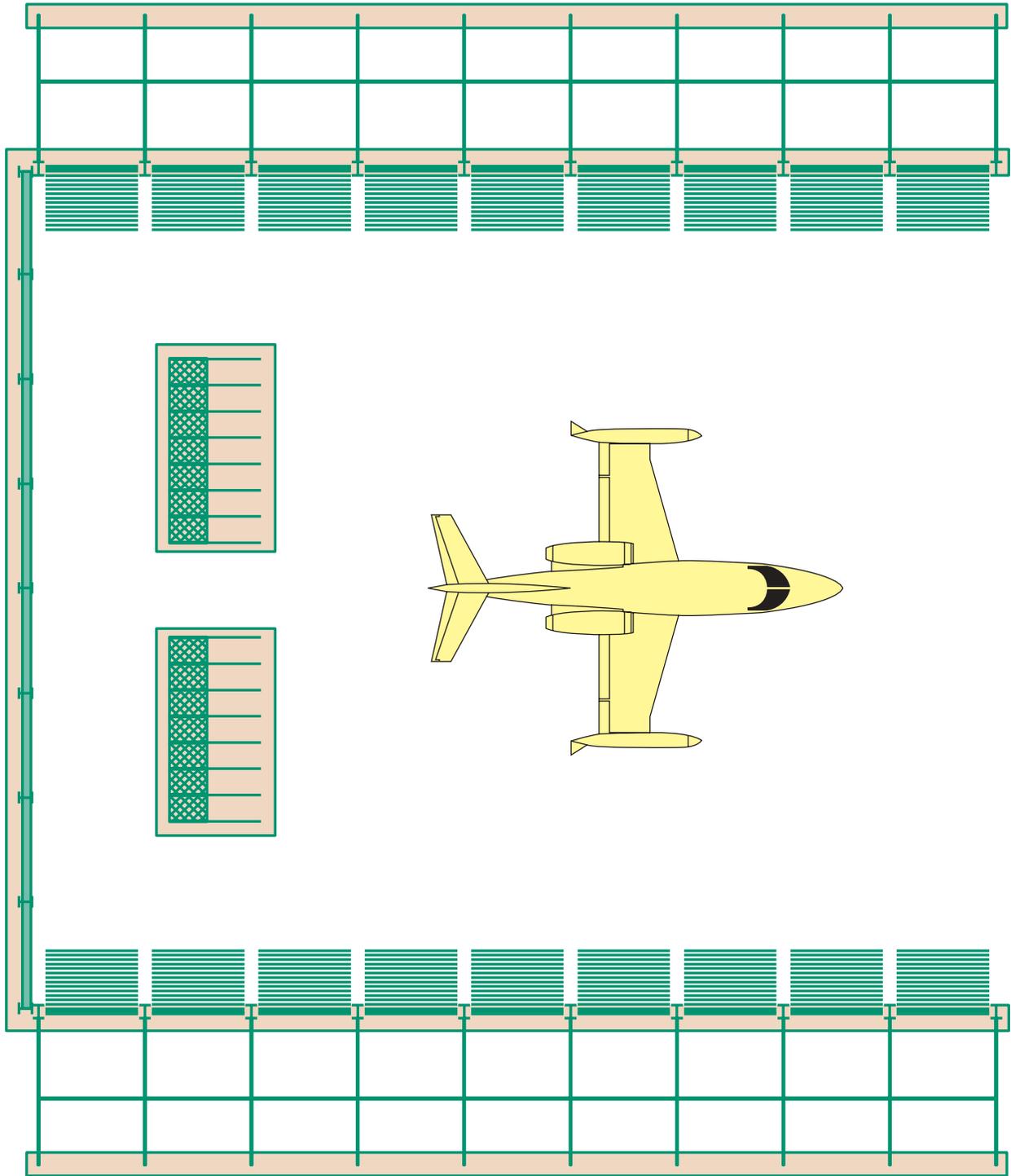
is approximately \$3,500,000. The \$3,500,000 cost of the run-up enclosure would not be eligible for federal funding from the noise set-aside portion of the Airport Improvement Program (AIP).

Conclusion

Construction of a run-up enclosure is not necessary to mitigate run-up noise at Lincoln Airport. However, if run-ups are to be allowed on the east side of the airport during nighttime hours, a run-up enclosure would be needed. Site C is a suitable location for a run-up enclosure.

SUMMARY

This chapter has analyzed the range of potential noise abatement techniques for use at Lincoln Airport. The alternatives for additional consideration are listed in **Table 4D**. The results of this analysis must be reviewed by the Planning Advisory Committee (PAC) and the general public before final recommendations can be made. Final recommendations will be presented in Chapter Six, the Noise Compatibility Plan.



Source: Rheinhold & Mahla AG
Puchheim, Germany

TABLE 4D
Summary Of Noise Abatement Alternatives

Alternative	Advantages	Disadvantages
1. Utilize Runway 17R-35L during nighttime hours (10:00 p.m. to 7:00 a.m.).	<ul style="list-style-type: none"> ● Reduces noise and overflights of noise-sensitive land uses southeast of the airport. 	<ul style="list-style-type: none"> ● Increases population within the 65 DNL contour. ● An environmental assessment would be required. ● Increasing potential for runway incursions when the tower is closed.
2. Engine Run-up Location Noise Assessment.	<ul style="list-style-type: none"> ● Reduces runway incursions. ● Reduces taxi distances to run-up pad. 	<ul style="list-style-type: none"> ● Cost could be as high as \$1.25 million. ● Uses potential revenue-generating property for non-revenue-generating use.
3. Run-Up Enclosure Assessment.	<ul style="list-style-type: none"> ● Reduces taxi distances to run-up pad during the nighttime hours. ● Reduces potential runway incursions 	<ul style="list-style-type: none"> ● Cost \$3,500,000. ● Not eligible for federal funding assistance.